

AM101378.ST25.txt  
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<213> Homo sapiens  
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Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
35 40 45

Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
50 55 60

Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
65 70 75 80

Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
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Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
100 105 110

Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
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Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
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Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
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His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
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Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
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Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
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Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
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Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg  
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Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
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Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu  
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Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr  
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Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp  
290 295 300

Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
305 310 315 320

Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly  
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Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly  
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Leu Gln Ser Ala Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn  
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Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
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Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
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Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu  
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Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu  
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His Leu Pro Val Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln  
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Cys Gln Leu Thr Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro  
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Pro Pro Cys Ala Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala  
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Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly  
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Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu  
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Gly Thr Pro Cys Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg  
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<210> 3  
 <211> 1421  
 <212> DNA  
 <213> Artificial

<220>  
 <223> This is an artificial DNA sequence cloned by PCR

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<213> Homo sapiens

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<400> 15

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Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
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Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
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Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
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His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
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Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
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Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
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Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn Met Leu His Asp  
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Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg  
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His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp

180

190

Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
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Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
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Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
225 230 235 240

Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
245 250 255

Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
260 265 270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
275 280 285

Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
290 295 300

Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys  
305 310 315 320

Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr  
325 330 335

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340 345 350

Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu  
355 360 365

Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His Arg Thr Asp Leu  
370 375 380

Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly  
385 390 395 400

Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu  
405 410 415

Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp Gly Thr Pro Cys  
420 425 430

Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg Cys Ile His Ala  
 435 440 445

Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys Met  
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Val Cys Gly Gly Asp Gly Ser Gly Cys Ser Lys Gln Ser Gly Ser Phe  
 465 470 475 480

Arg Lys Phe Arg Tyr Gly Tyr Asn Asn Val Val Thr Ile Pro Ala Gly  
 485 490 495

Ala Thr His Ile Leu Val Arg Gln Gln Gly Asn Pro Gly His Arg Ser  
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Ile Tyr Leu Ala Leu Lys Leu Pro Asp Gly Ser Tyr Ala Leu Asn Gly  
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Glu Tyr Thr Leu Met Pro Ser Pro Thr Asp Val Val Leu Pro Gly Ala  
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Val Ser Leu Arg Tyr Ser Gly Ala Thr Ala Ala Ser Glu Thr Leu Ser  
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Gly Asn Pro Gln Asp Thr Arg Leu Arg Tyr Ser Phe Phe Val Pro Arg  
 580 585 590

Pro Thr Pro Ser Thr Pro Arg Pro Thr Pro Gln Asp Trp Leu His Arg  
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Lys  
 625

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## AM101378.ST25.txt

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 Val Met Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn  
 35 40 45  
 Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
 50 55 60  
 Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
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 Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
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 His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
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 Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
 115 120 125  
 Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
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 145 150 155 160  
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 165 170 175  
 His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
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 Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
 195 200 205  
 Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
 210 215 220  
 Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
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Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
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Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
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Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
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Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
                           290                          295                          300

Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys  
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Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr  
                           325                          330                          335

Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu Gly Arg Arg Thr  
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Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu  
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Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His Arg Thr Asp Leu  
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Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly  
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Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu  
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Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp Gly Thr Pro Cys  
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Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg Cys Ile His Ala  
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Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys Met  
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Arg Lys

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Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn  
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Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
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Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
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Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
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His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
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Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
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Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
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 145 150 155 160

Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg  
 165 170 175

His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
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Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
 195 200 205

Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
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Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
 225 230 235 240

Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
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Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
260 265 270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
275 280 285

Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
290 295 300

Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys  
305 310 315 320

Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr  
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Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
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Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
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AM101378.ST25.txt

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 Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
 100 105 110  
 Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
 115 120 125  
 Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
 130 135 140  
 Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
 145 150 155 160  
 His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
 165 170 175  
 Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
 180 185 190  
 Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
 195 200 205  
 Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
 210 215 220  
 Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg  
 225 230 235 240  
 Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
 245 250 255  
 Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu  
 260 265 270  
 Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr  
 275 280 285  
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 290 295 300  
 Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
 305 310 315 320

Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly  
325 330 335

Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly  
340 345 350

Leu Gln Ser Ala Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn  
355 360 365

Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
370 375 380

Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
385 390 395 400

Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu  
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Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu His His His  
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His His His  
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Page 23

20

25

30

Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
35 40 45

Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
50 55 60

Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
65 70 75 80

Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
85 90 95

Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
100 105 110

Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
115 120 125

Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
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Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
145 150 155 160

His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
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Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
180 185 190

Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
195 200 205

Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
210 215 220

Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg  
225 230 235 240

Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
245 250 255

Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu  
260 265 270



Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr  
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 290 295 300

Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
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Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly  
 325 330 335

Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly  
 340 345 350

Leu Gln Ser Ala Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn  
 355 360 365

Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
 370 375 380

Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
 385 390 395 400

Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu  
 405 410 415

Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu  
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His Leu Pro Val Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln  
 435 440 445

Cys Gln Leu Thr Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro  
 450 455 460

Pro Pro Cys Ala Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala  
 465 470 475 480

Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly  
 485 490 495

Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu  
 500 505 510

Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro  
 515 520 525

Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser  
530 535 540

Arg Asp Cys Thr Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu  
545 550 555 560

Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr  
565 570 575

Gly Ser Ala Leu Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His  
580 585 590

Arg Thr Asp Leu Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro  
595 600 605

Arg Tyr Thr Gly Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln  
610 615 620

Ala Arg Ala Leu Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp  
625 630 635 640

Gly Thr Pro Cys Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg  
645 650 655

Cys Ile His Ala Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe  
660 665 670

Asp Lys Cys Met Val Cys Gly Gly Asp Gly Ser Gly Cys Ser Gly Ser  
675 680 685

Ala Trp Ser His Pro Gln Phe Glu Lys  
690 695

<210> 25  
<211> 11  
<212> PRT  
<213> Artificial

<220>  
<223> Construct C tag sequence

<400> 25

Gly Ser Ala Trp Ser His Pro Gln Phe Glu Lys  
1 5 10

<210> 26  
<211> 686  
<212> PRT  
<213> Artificial

&lt;220&gt;

&lt;223&gt; Truncated ADAMTS4 construct D

&lt;400&gt; 26

Met Ser Gln Thr Gly Ser His Pro Gly Arg Gly Leu Ala Gly Arg Trp  
 1 5 10 15

Leu Trp Gly Ala Gln Pro Cys Leu Leu Leu Pro Ile Val Pro Leu Ser  
 20 25 30

Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
 35 40 45

Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
 50 55 60

Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
 65 70 75 80

Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
 85 90 95

Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
 100 105 110

Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
 115 120 125

Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
 130 135 140

Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
 145 150 155 160

His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
 165 170 175

Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
 180 185 190

Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
 195 200 205

Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
 210 215 220

Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg



Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly  
 485 490 495

Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu  
 500 505 510

Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro  
 515 520 525

Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser  
 530 535 540

Arg Asp Cys Thr Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu  
 545 550 555 560

Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr  
 565 570 575

Gly Ser Ala Leu Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His  
 580 585 590

Arg Thr Asp Leu Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro  
 595 600 605

Arg Tyr Thr Gly Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln  
 610 615 620

Ala Arg Ala Leu Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp  
 625 630 635 640

Gly Thr Pro Cys Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg  
 645 650 655

Cys Ile His Ala Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe  
 660 665 670

Asp Lys Cys Met Val Cys Gly Gly Asp Gly Ser Gly Cys Ser  
 675 680 685

<210> 27  
 <211> 858  
 <212> PRT  
 <213> Artificial

<220>  
 <223> modified ADAMTS4 molecule

<400> 27

Met Ser Gln Thr Gly Ser His Pro Gly Arg Gly Leu Ala Gly Arg Trp  
 Page 29

1                      5                      10                      15  
 Leu Trp Gly Ala Gln Pro Cys Leu Leu Leu Pro Ile Val Pro Leu Ser  
                     20                      25                      30  
 Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
                     35                      40                      45  
 Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
                     50                      55                      60  
 Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
                     65                      70                      75                      80  
 Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
                     85                      90                      95  
 Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
                     100                      105                      110  
 Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
                     115                      120                      125  
 Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
                     130                      135                      140  
 Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
                     145                      150                      155                      160  
 His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
                     165                      170                      175  
 Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
                     180                      185                      190  
 Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
                     195                      200                      205  
 Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
                     210                      215                      220  
 Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg  
                     225                      230                      235                      240  
 Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
                     245                      250                      255

Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu  
 260 265 270

Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr  
 275 280 285

Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp  
 290 295 300

Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
 305 310 315 320

Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly  
 325 330 335

Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly  
 340 345 350

Leu Gln Ser Ala Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn  
 355 360 365

Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
 370 375 380

Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
 385 390 395 400

Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu  
 405 410 415

Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu Gly Ser Gly  
 420 425 430

Ser Gly Asp Asp Asp Asp Lys Ala Pro Leu His Leu Pro Val Thr Phe  
 435 440 445

Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr Phe Gly  
 450 455 460

Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala Ala Leu  
 465 470 475 480

Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr Lys His  
 485 490 495

Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala Cys Met  
 500 505 510

Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn Ile Pro  
 515 520 525

Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys Ser Arg  
 530 535 540

Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr Arg Pro  
 545 550 555 560

Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu Gly Arg Arg Thr Arg Phe  
 565 570 575

Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu Thr Phe  
 580 585 590

Arg Glu Glu Gln Cys Ala Ala Tyr Asn His Arg Thr Asp Leu Phe Lys  
 595 600 605

Ser Phe Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly Val Ala  
 610 615 620

Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu Gly Tyr  
 625 630 635 640

Tyr Tyr Val Leu Glu Pro Arg Val Val Asp Gly Thr Pro Cys Ser Pro  
 645 650 655

Asp Ser Ser Ser Val Cys Val Gln Gly Arg Cys Ile His Ala Gly Cys  
 660 665 670

Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys Met Val Cys  
 675 680 685

Gly Gly Asp Gly Ser Gly Cys Ser Lys Gln Ser Gly Ser Phe Arg Lys  
 690 695 700

Phe Arg Tyr Gly Tyr Asn Asn Val Val Thr Ile Pro Ala Gly Ala Thr  
 705 710 715 720

His Ile Leu Val Arg Gln Gln Gly Asn Pro Gly His Arg Ser Ile Tyr  
 725 730 735

Leu Ala Leu Lys Leu Pro Asp Gly Ser Tyr Ala Leu Asn Gly Glu Tyr  
 740 745 750

Thr Leu Met Pro Ser Pro Thr Asp Val Val Leu Pro Gly Ala Val Ser  
 755 760 765



Leu Arg Tyr Ser Gly Ala Thr Ala Ala Ser Glu Thr Leu Ser Gly His  
770 775 780

Gly Pro Leu Ala Gln Pro Leu Thr Leu Gln Val Leu Val Ala Gly Asn  
785 790 795 800

Pro Gln Asp Thr Arg Leu Arg Tyr Ser Phe Phe Val Pro Arg Pro Thr  
805 810 815

Pro Ser Thr Pro Arg Pro Thr Pro Gln Asp Trp Leu His Arg Arg Ala  
820 825 830

Gln Ile Leu Glu Ile Leu Arg Arg Arg Pro Trp Ala Gly Arg Lys Gly  
835 840 845

Ser Ala Trp Ser His Pro Gln Phe Glu Lys  
850 855

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<212> PRT  
<213> Artificial

<220>  
<223> construct E insertion sequence  
<400> 28

Gly Ser Gly Ser Gly Asp Asp Asp Asp Lys  
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<210> 29  
<211> 846  
<212> PRT  
<213> Artificial

<220>  
<223> ADAMTS4 with active-site mutation  
<400> 29

Met Ser Gln Thr Gly Ser His Pro Gly Arg Gly Leu Ala Gly Arg Trp  
1 5 10 15

Leu Trp Gly Ala Gln Pro Cys Leu Leu Leu Pro Ile Val Pro Leu Ser  
20 25 30

Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
35 40 45

Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
Page 33

50

55

60

Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
65 70 75 80

Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
85 90 95

Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
100 105 110

Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
115 120 125

Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
130 135 140

Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
145 150 155 160

His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
165 170 175

Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
180 185 190

Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
195 200 205

Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
210 215 220

Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg  
225 230 235 240

Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
245 250 255

Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu  
260 265 270

Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr  
275 280 285

Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp  
290 295 300

Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
305 310 315 320

Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly  
325 330 335

Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly  
340 345 350

Leu Gln Ser Ala Phe Thr Ala Ala His Gln Leu Gly His Val Phe Asn  
355 360 365

Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
370 375 380

Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
385 390 395 400

Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu  
405 410 415

Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu  
420 425 430

His Leu Pro Val Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln  
435 440 445

Cys Gln Leu Thr Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro  
450 455 460

Pro Pro Cys Ala Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala  
465 470 475 480

Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly  
485 490 495

Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu  
500 505 510

Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro  
515 520 525

Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser  
530 535 540

Arg Asp Cys Thr Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu  
545 550 555 560

Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr  
 565 570 575

Gly Ser Ala Leu Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His  
 580 585 590

Arg Thr Asp Leu Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro  
 595 600 605

Arg Tyr Thr Gly Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln  
 610 615 620

Ala Arg Ala Leu Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp  
 625 630 635 640

Gly Thr Pro Cys Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg  
 645 650 655

Cys Ile His Ala Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe  
 660 665 670

Asp Lys Cys Met Val Cys Gly Gly Asp Gly Ser Gly Cys Ser Lys Gln  
 675 680 685

Ser Gly Ser Phe Arg Lys Phe Arg Tyr Gly Tyr Asn Asn Val Val Thr  
 690 695 700

Ile Pro Ala Gly Ala Thr His Ile Leu Val Arg Gln Gln Gly Asn Pro  
 705 710 715 720

Gly His Arg Ser Ile Tyr Leu Ala Leu Lys Leu Pro Asp Gly Ser Tyr  
 725 730 735

Ala Leu Asn Gly Glu Tyr Thr Leu Met Pro Ser Pro Thr Asp Val Val  
 740 745 750

Leu Pro Gly Ala Val Ser Leu Arg Tyr Ser Gly Ala Thr Ala Ala Ser  
 755 760 765

Glu Thr Leu Ser Gly His Gly Pro Leu Ala Gln Pro Leu Thr Leu Gln  
 770 775 780

Val Leu Val Ala Gly Asn Pro Gln Asp Thr Arg Leu Arg Tyr Ser Phe  
 785 790 795 800

Phe Val Pro Arg Pro Thr Pro Ser Thr Pro Arg Pro Thr Pro Gln Asp  
 805 810 815

Trp Leu His Arg Arg Ala Gln Ile Leu Glu Ile Leu Arg Arg Arg Pro  
820 825 830

Trp Ala Gly Arg Lys Val Asp Tyr Lys Asp Asp Asp Asp Lys  
835 840 845

<210> 30  
<211> 9  
<212> PRT  
<213> Artificial

<220>  
<223> FLAG tag sequence

<400> 30

Val Asp Tyr Lys Asp Asp Asp Asp Lys  
1 5

<210> 31  
<211> 584  
<212> PRT  
<213> Artificial

<220>  
<223> Truncated ADAMTS4 ASM

<400> 31

Met Ser Gln Thr Gly Ser His Pro Gly Arg Gly Leu Ala Gly Arg Trp  
1 5 10 15

Leu Trp Gly Ala Gln Pro Cys Leu Leu Leu Pro Ile Val Pro Leu Ser  
20 25 30

Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
35 40 45

Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
50 55 60

Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
65 70 75 80

Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
85 90 95

Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
100 105 110

Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
Page 37

115

120

Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
130 135 140

Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
145 150 155 160

His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
165 170 175

Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
180 185 190

Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
195 200 205

Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
210 215 220

Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg  
225 230 235 240

Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
245 250 255

Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu  
260 265 270

Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr  
275 280 285

Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp  
290 295 300

Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
305 310 315 320

Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly  
325 330 335

Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly  
340 345 350

Leu Gln Ser Ala Phe Thr Ala Ala His Gln Leu Gly His Val Phe Asn  
355 360 365

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Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
370 375 380

Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
385 390 395 400

Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu  
405 410 415

Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu  
420 425 430

His Leu Pro Val Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln  
435 440 445

Cys Gln Leu Thr Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro  
450 455 460

Pro Pro Cys Ala Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala  
465 470 475 480

Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly  
485 490 495

Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu  
500 505 510

Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro  
515 520 525

Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser  
530 535 540

Arg Asp Cys Thr Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu  
545 550 555 560

Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Val  
565 570 575

Asp Tyr Lys Asp Asp Asp Asp Lys  
580

<210> 32  
<211> 529  
<212> PRT  
<213> Artificial

<220>  
<223> Truncated ADAMTS4 ASM

&lt;400&gt; 32

Met Ser Gln Thr Gly Ser His Pro Gly Arg Gly Leu Ala Gly Arg Trp  
 1 5 10 15

Leu Trp Gly Ala Gln Pro Cys Leu Leu Leu Pro Ile Val Pro Leu Ser  
 20 25 30

Trp Leu Val Trp Leu Leu Leu Leu Leu Ala Ser Leu Leu Pro Ser  
 35 40 45

Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
 50 55 60

Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
 65 70 75 80

Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
 85 90 95

Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
 100 105 110

Gly Gln Ala Pro Glu Leu Leu Gly Gly Ala Glu Pro Gly Thr Tyr Leu  
 115 120 125

Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
 130 135 140

Asp Gly Gly Ala Leu Leu Gly Val Leu Gln Tyr Arg Gly Ala Glu Leu  
 145 150 155 160

His Leu Gln Pro Leu Glu Gly Gly Thr Pro Asn Ser Ala Gly Gly Pro  
 165 170 175

Gly Ala His Ile Leu Arg Arg Lys Ser Pro Ala Ser Gly Gln Gly Pro  
 180 185 190

Met Cys Asn Val Lys Ala Pro Leu Gly Ser Pro Ser Pro Arg Pro Arg  
 195 200 205

Arg Ala Lys Arg Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val  
 210 215 220

Val Ala Asp Asp Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg  
 225 230 235 240



Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
 245 250 255

Ser Ile Arg Asn Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu  
 260 265 270

Gly Ser Gly Glu Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr  
 275 280 285

Leu Arg Ser Phe Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp  
 290 295 300

Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
 305 310 315 320

Leu Cys Gly Val Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly  
 325 330 335

Thr Val Cys Asp Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly  
 340 345 350

Leu Gln Ser Ala Phe Thr Ala Ala His Gln Leu Gly His Val Phe Asn  
 355 360 365

Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
 370 375 380

Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
 385 390 395 400

Glu Glu Pro Trp Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu  
 405 410 415

Asp Asn Gly Tyr Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu  
 420 425 430

His Leu Pro Val Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln  
 435 440 445

Cys Gln Leu Thr Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro  
 450 455 460

Pro Pro Cys Ala Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala  
 465 470 475 480

Met Cys Gln Thr Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly  
 485 490 495

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Pro Ala Gln Ala Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu  
500 505 510

Gln Asp Phe Asn Ile Pro Gln Ala Val Asp Tyr Lys Asp Asp Asp Asp  
515 520 525

Lys

<210> 33  
<211> 42  
<212> DNA  
<213> Artificial

<220>  
<223> PCR primer

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taaatcgaat tcccaccatg tcccagacag gctcgcaccc cg 42

<210> 34  
<211> 37  
<212> DNA  
<213> Artificial

<220>  
<223> PCR primer

<400> 34  
tattatgtct actgggcagt cctcagtgtt gcaggag 37

<210> 35  
<211> 37  
<212> DNA  
<213> Artificial

<220>  
<223> PCR primer

<400> 35  
tattatgtct acagcctgtg gaatattgaa gtcctgg 37

<210> 36  
<211> 53  
<212> DNA  
<213> Artificial

<220>  
<223> Flag1 sequence

<400> 36  
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<210> 37  
<211> 53

<212> DNA  
<213> Artificial

<220>  
<223> Flag2 sequence

<400> 37  
ggccgcttac ttgtcatcgt catccttgta gtctacgata gcactagcat agg 53

<210> 38  
<211> 3916  
<212> DNA  
<213> Artificial

<220>  
<223> cloning vector

<400> 38  
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tcactcatta ggcaccccag gctttacact ttatgcttcc ggctcgtatg ttgtgtggaa 180  
ttgtgagcgg ataacaattt cacacaggaa acagctatga ccatgattac gccaagcttg 240  
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ccagctggcg taatagcgaa gaggcccgca ccgatcgccc ttccaacag ttgcgcagcc 540  
tgaatggcga atgggacgcg ccctgtagcg gcgcattaag cgcggcggggt gtggtgggta 600  
cgcgcagcgt gaccgctaca cttgccagcg ccctagcgcc cgctcctttc gctttcttcc 660  
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cgttctttta tagtggactc ttgttccaaa ctggaacaac actcaaccct atcgcggtct 900  
attcttttga ttataagggt attttgccga tttcggccta ttggttaaaa aatgagctga 960  
tttaacaaat tcagggcgca agggctgcta aaggaaccgg aacacgtaga aagccagtcc 1020  
gcagaaacgg tgctgacccc ggtgaatgt cagctactgg gctatctgga caagggaaaa 1080  
cgcaagcgca aagagaaagc aggtagcttg cagtgggctt acatggcgat agctagactg 1140  
ggcggtttta tggacagcaa gcgaaccgga attgccagct ggggcgccct ctggttaagg 1200  
tgggaagccc tgcaaagtaa actggatggc tttcttgccg ccaaggatct gatggcgag 1260  
gggatcaaga tctgatcaag agacaggatg aggatcgttt cgcattgattg aacaagatgg 1320

## AM101378.ST25.txt

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## AM101378.ST25.txt

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AM101378.ST25.txt

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## AM101378.ST25.txt

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Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu Ile Val Phe Pro  
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Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser Gly Ala Pro Ala Arg  
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Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu Thr Leu Leu Leu Glu Leu  
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Glu Gln Asp Ser Gly Val Gln Val Glu Gly Leu Thr Val Gln Tyr Leu  
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Thr Gly Thr Ile Asn Gly Asp Pro Glu Ser Val Ala Ser Leu His Trp  
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Tyr Leu Leu Thr Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro  
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Ser Asp Pro Asp His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp  
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Met Leu His Asp Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu  
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Ser Thr Ser Arg His Val Met Ala Pro Val Met Ala His Val Asp Pro  
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Cys Asn Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu Thr Phe Arg Glu  
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Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly Val Ala Pro Gln  
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Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu Gly Tyr Tyr Tyr  
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Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys Met Val Cys Gly Gly  
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Leu Val Arg Gln Gln Gly Asn Pro Gly His Arg Ser Ile Tyr Leu Ala  
725 730 735

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755 760 765

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Thr Pro Arg Pro Thr Pro Gln Asp Trp Leu His Arg Arg Ala Gln Ile  
Page 51

820

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68

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&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; furin-processed construct B

&lt;400&gt; 46

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165 170 175His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
Page 53

180

190

Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
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Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
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Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
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Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
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Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
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Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
 225 230 235 240

Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
 245 250 255

Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
 260 265 270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
 275 280 285

Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
 290 295 300

Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys  
 310 315 320

Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr  
 325 330 335

Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu Gly Arg Arg Thr  
 340 345 350

Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu  
 355 360 365

Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His Arg Thr Asp Leu  
 370 375 380

Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly  
 385 390 395 400

Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu  
 405 410 415

Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp Gly Thr Pro Cys  
 Page 55

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425

430

Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg Cys Ile His Ala  
 435 440 445

Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys Met  
 450 455 460

Val Cys Gly Gly Asp Gly Ser Gly Cys Ser Gly Ser Ala Trp Ser His  
 465 470 475 480

Pro Gln Phe Glu Lys  
 485

<210> 48  
 <211> 474  
 <212> PRT  
 <213> Artificial

<220>  
 <223> furin-processed construct D

<400> 48

Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val Ala Asp Asp  
 1 5 10 15

Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg Tyr Leu Leu Thr  
 20 25 30

Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn  
 35 40 45

Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
 50 55 60

Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
 65 70 75 80

Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
 85 90 95

His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
 100 105 110

Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
 115 120 125

Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
 130 135 140



Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn Met Leu His Asp  
145 150 155 160

Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg  
165 170 175

His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
180 185 190

Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
195 200 205

Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
210 215 220

Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
225 230 235 240

Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
245 250 255

Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
260 265 270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
275 280 285

Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
290 295 300

Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys  
305 310 315 320

Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr  
325 330 335

Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu Gly Arg Arg Thr  
340 345 350

Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu  
355 360 365

Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His Arg Thr Asp Leu  
370 375 380

Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly  
Page 57

385

390

395

400

Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu  
                   405                  410                  415

Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp Gly Thr Pro Cys  
                   420                  425                  430

Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg Cys Ile His Ala  
                   435                  440                  445

Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys Met  
           450                  455                  460

Val Cys Gly Gly Asp Gly Ser Gly Cys Ser  
 465                  470

&lt;210&gt; 49

&lt;211&gt; 646

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; furin-processed construct E

&lt;400&gt; 49

Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val Ala Asp Asp  
 1                  5                  10                  15

Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg Tyr Leu Leu Thr  
                   20                  25                  30

Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn  
                   35                  40                  45

Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
           50                  55                  60

Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
 65                  70                  75                  80

Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
                   85                  90                  95

His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
                   100                  105                  110

Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
           115                  120                  125

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Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
130 135 140

Phe Thr Ala Ala His Glu Leu Gly His Val Phe Asn Met Leu His Asp  
145 150 155 160

Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg  
165 170 175

His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
180 185 190

Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
195 200 205

Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
210 215 220

Gly Ser Gly Ser Gly Asp Asp Asp Asp Lys Thr Phe Pro Gly Lys Asp  
225 230 235 240

Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr Phe Gly Pro Asp Ser Arg  
245 250 255

His Cys Pro Gln Leu Pro Pro Pro Cys Ala Ala Leu Trp Cys Ser Gly  
260 265 270

His Leu Asn Gly His Ala Met Cys Gln Thr Lys His Ser Pro Trp Ala  
275 280 285

Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala Cys Met Gly Gly Arg Cys  
290 295 300

Leu His Met Asp Gln Leu Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly  
305 310 315 320

Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly  
325 330 335

Gly Val Gln Phe Ser Ser Arg Asp Cys Thr Arg Pro Val Pro Arg Asn  
340 345 350

Gly Gly Lys Tyr Cys Glu Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn  
355 360 365

Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu Thr Phe Arg Glu Glu Gln  
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375

Cys Ala Ala Tyr Asn His Arg Thr Asp Leu Phe Lys Ser Phe Pro Gly  
385 390 395 400

Pro Met Asp Trp Val Pro Arg Tyr Thr Gly Val Ala Pro Gln Asp Gln  
405 410 415

Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu Gly Tyr Tyr Tyr Val Leu  
420 425 430

Glu Pro Arg Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser Ser Ser  
435 440 445

Val Cys Val Gln Gly Arg Cys Ile His Ala Gly Cys Asp Arg Ile Ile  
450 455 460

Gly Ser Lys Lys Lys Phe Asp Lys Cys Met Val Cys Gly Gly Asp Gly  
465 470 475 480

Ser Gly Cys Ser Lys Gln Ser Gly Ser Phe Arg Lys Phe Arg Tyr Gly  
485 490 495

Tyr Asn Asn Val Val Thr Ile Pro Ala Gly Ala Thr His Ile Leu Val  
500 505 510

Arg Gln Gln Gly Asn Pro Gly His Arg Ser Ile Tyr Leu Ala Leu Lys  
515 520 525

Leu Pro Asp Gly Ser Tyr Ala Leu Asn Gly Glu Tyr Thr Leu Met Pro  
530 535 540

Ser Pro Thr Asp Val Val Leu Pro Gly Ala Val Ser Leu Arg Tyr Ser  
545 550 555 560

Gly Ala Thr Ala Ala Ser Glu Thr Leu Ser Gly His Gly Pro Leu Ala  
565 570 575

Gln Pro Leu Thr Leu Gln Val Leu Val Ala Gly Asn Pro Gln Asp Thr  
580 585 590

Arg Leu Arg Tyr Ser Phe Phe Val Pro Arg Pro Thr Pro Ser Thr Pro  
595 600 605

Arg Pro Thr Pro Gln Asp Trp Leu His Arg Arg Ala Gln Ile Leu Glu  
610 615 620

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Ile Leu Arg Arg Arg Pro Trp Ala Gly Arg Lys Gly Ser Ala Trp Ser  
625 630 635 640

His Pro Gln Phe Glu Lys  
645

<210> 50  
<211> 634  
<212> PRT  
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<220>  
<223> furin-processed construct G

<400> 50

Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val Ala Asp Asp  
1 5 10 15

Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg Tyr Leu Leu Thr  
20 25 30

Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn  
35 40 45

Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
50 55 60

Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
65 70 75 80

Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
85 90 95

His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
100 105 110

Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
115 120 125

Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
130 135 140

Phe Thr Ala Ala His Gln Leu Gly His Val Phe Asn Met Leu His Asp  
145 150 155 160

Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg  
165 170 175

His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
Page 61

180

190

Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
195 200 205

Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
210 215 220

Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
225 230 235 240

Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
245 250 255

Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
260 265 270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
275 280 285

Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
290 295 300

Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys  
305 310 315 320

Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr  
325 330 335

Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu Gly Arg Arg Thr  
340 345 350

Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Thr Gly Ser Ala Leu  
355 360 365

Thr Phe Arg Glu Glu Gln Cys Ala Ala Tyr Asn His Arg Thr Asp Leu  
370 375 380

Phe Lys Ser Phe Pro Gly Pro Met Asp Trp Val Pro Arg Tyr Thr Gly  
385 390 395 400

Val Ala Pro Gln Asp Gln Cys Lys Leu Thr Cys Gln Ala Arg Ala Leu  
405 410 415

Gly Tyr Tyr Tyr Val Leu Glu Pro Arg Val Val Asp Gly Thr Pro Cys  
420 425 430

Ser Pro Asp Ser Ser Ser Val Cys Val Gln Gly Arg Cys Ile His Ala  
 435 440 445

Gly Cys Asp Arg Ile Ile Gly Ser Lys Lys Lys Phe Asp Lys Cys Met  
 450 455 460

Val Cys Gly Gly Asp Gly Ser Gly Cys Ser Lys Gln Ser Gly Ser Phe  
 465 470 475 480

Arg Lys Phe Arg Tyr Gly Tyr Asn Asn Val Val Thr Ile Pro Ala Gly  
 485 490 495

Ala Thr His Ile Leu Val Arg Gln Gln Gly Asn Pro Gly His Arg Ser  
 500 505 510

Ile Tyr Leu Ala Leu Lys Leu Pro Asp Gly Ser Tyr Ala Leu Asn Gly  
 515 520 525

Glu Tyr Thr Leu Met Pro Ser Pro Thr Asp Val Val Leu Pro Gly Ala  
 530 535 540

Val Ser Leu Arg Tyr Ser Gly Ala Thr Ala Ala Ser Glu Thr Leu Ser  
 545 550 555 560

Gly His Gly Pro Leu Ala Gln Pro Leu Thr Leu Gln Val Leu Val Ala  
 565 570 575

Gly Asn Pro Gln Asp Thr Arg Leu Arg Tyr Ser Phe Phe Val Pro Arg  
 580 585 590

Pro Thr Pro Ser Thr Pro Arg Pro Thr Pro Gln Asp Trp Leu His Arg  
 595 600 605

Arg Ala Gln Ile Leu Glu Ile Leu Arg Arg Arg Pro Trp Ala Gly Arg  
 610 615 620

Lys Val Asp Tyr Lys Asp Asp Asp Asp Lys  
 625 630

<210> 51  
 <211> 372  
 <212> PRT  
 <213> Artificial

<220>  
 <223> furin-processed construct H

<400> 51

Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val Ala Asp Asp

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1           5           10           15
Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg Tyr Leu Leu Thr
      20      25      30
Val Met Ala Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn
      35      40      45
Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu
      50      55      60
Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe
      65      70      75      80
Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp
      85      90      95
His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val
      100      105      110
Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp
      115      120      125
Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala
      130      135      140
Phe Thr Ala Ala His Gln Leu Gly His Val Phe Asn Met Leu His Asp
      145      150      155      160
Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg
      165      170      175
His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp
      180      185      190
Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr
      195      200      205
Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val
      210      215      220
Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr
      225      230      235      240
Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala
      245      250      255

```



Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
 260 265 270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
 275 280 285

Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
 290 295 300

Ile Pro Gln Ala Gly Gly Trp Gly Pro Trp Gly Pro Trp Gly Asp Cys  
 305 310 315 320

Ser Arg Thr Cys Gly Gly Gly Val Gln Phe Ser Ser Arg Asp Cys Thr  
 325 330 335

Arg Pro Val Pro Arg Asn Gly Gly Lys Tyr Cys Glu Gly Arg Arg Thr  
 340 345 350

Arg Phe Arg Ser Cys Asn Thr Glu Asp Cys Pro Val Asp Tyr Lys Asp  
 355 360 365

Asp Asp Asp Lys  
 370

<210> 52  
 <211> 317  
 <212> PRT  
 <213> Artificial

<220>  
 <223> furin-processed construct I

<400> 52

Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val Ala Asp Asp  
 1 5 10 15

Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg Tyr Leu Leu Thr  
 20 25 30

Val Met Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn  
 35 40 45

Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
 50 55 60

Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
 65 70 75 80

Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
 Page 65

His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
 100 105 110

Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
 115 120 125

Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
 130 135 140

Phe Thr Ala Ala His Gln Leu Gly His Val Phe Asn Met Leu His Asp  
 145 150 155 160

Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg  
 165 170 175

His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
 180 185 190

Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
 195 200 205

Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
 210 215 220

Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
 225 230 235 240

Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
 245 250 255

Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
 260 265 270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
 275 280 285

Cys Met Gly Gly Arg Cys Leu His Met Asp Gln Leu Gln Asp Phe Asn  
 290 295 300

Ile Pro Gln Ala Val Asp Tyr Lys Asp Asp Asp Asp Lys  
 305 310 315

<210> 53  
 <211> 633  
 <212> PRT  
 <213> Artificial

&lt;220&gt;

&lt;223&gt; furin-processed construct F

&lt;400&gt; 53

Phe Ala Ser Leu Ser Arg Phe Val Glu Thr Leu Val Val Ala Asp Asp  
 1 5 10 15

Lys Met Ala Ala Phe His Gly Ala Gly Leu Lys Arg Tyr Leu Leu Thr  
 20 25 30

Val Met Ala Ala Ala Lys Ala Phe Lys His Pro Ser Ile Arg Asn  
 35 40 45

Pro Val Ser Leu Val Val Thr Arg Leu Val Ile Leu Gly Ser Gly Glu  
 50 55 60

Glu Gly Pro Gln Val Gly Pro Ser Ala Ala Gln Thr Leu Arg Ser Phe  
 65 70 75 80

Cys Ala Trp Gln Arg Gly Leu Asn Thr Pro Glu Asp Ser Asp Pro Asp  
 85 90 95

His Phe Asp Thr Ala Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Val  
 100 105 110

Ser Thr Cys Asp Thr Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp  
 115 120 125

Pro Ala Arg Ser Cys Ala Ile Val Glu Asp Asp Gly Leu Gln Ser Ala  
 130 135 140

Phe Thr Ala Ala His Gln Leu Gly His Val Phe Asn Met Leu His Asp  
 145 150 155 160

Asn Ser Lys Pro Cys Ile Ser Leu Asn Gly Pro Leu Ser Thr Ser Arg  
 165 170 175

His Val Met Ala Pro Val Met Ala His Val Asp Pro Glu Glu Pro Trp  
 180 185 190

Ser Pro Cys Ser Ala Arg Phe Ile Thr Asp Phe Leu Asp Asn Gly Tyr  
 195 200 205

Gly His Cys Leu Leu Asp Lys Pro Glu Ala Pro Leu His Leu Pro Val  
 210 215 220

Thr Phe Pro Gly Lys Asp Tyr Asp Ala Asp Arg Gln Cys Gln Leu Thr  
 Page 67

225                      230                      240

Phe Gly Pro Asp Ser Arg His Cys Pro Gln Leu Pro Pro Pro Cys Ala  
                                 245                      250                      255

Ala Leu Trp Cys Ser Gly His Leu Asn Gly His Ala Met Cys Gln Thr  
                                 260                      265                      270

Lys His Ser Pro Trp Ala Asp Gly Thr Pro Cys Gly Pro Ala Gln Ala  
                                 275                      280                      285

Cys Met Gly Gly Arg Cys Leu His Met Trp Ser His Pro Gln Phe Glu  
                                 290                      295                      300

Lys Asp Gln Leu Gln Asp Phe Asn Ile Pro Gln Ala Gly Gly Trp Gly  
305                                   310                      315                      320

Pro Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly Gly Val  
                                 325                      330                      335

Gln Phe Ser Ser Arg Asp Cys Thr Arg Pro Val Pro Arg Asn Gly Gly  
                                 340                      345                      350

Lys Tyr Cys Glu Gly Arg Arg Thr Arg Phe Arg Ser Cys Asn Thr Glu  
                                 355                      360                      365

Asp Cys Pro Thr Gly Ser Ala Leu Thr Phe Arg Glu Glu Gln Cys Ala  
                                 370                      375                      380

Ala Tyr Asn His Arg Thr Asp Leu Phe Lys Ser Phe Pro Gly Pro Met  
385                                   390                      395                      400

Asp Trp Val Pro Arg Tyr Thr Gly Val Ala Pro Gln Asp Gln Cys Lys  
                                 405                      410                      415

Leu Thr Cys Gln Ala Arg Ala Leu Gly Tyr Tyr Tyr Val Leu Glu Pro  
                                 420                      425                      430

Arg Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser Ser Ser Val Cys  
                                 435                      440                      445

Val Gln Gly Arg Cys Ile His Ala Gly Cys Asp Arg Ile Ile Gly Ser  
                                 450                      455                      460

Lys Lys Lys Phe Asp Lys Cys Met Val Cys Gly Gly Asp Gly Ser Gly  
465                                   470                      475                      480

AM101378.ST25.txt  
Cys Ser Lys Gln Ser Gly Ser Phe Arg Lys Phe Arg Tyr Gly Tyr Asn  
485 490 495

Gln Gly Asn Pro Gly His Arg Ser Ile Tyr Leu Ala Leu Lys Leu Pro  
515 520 525

Asp Gly Ser Tyr Ala Leu Asn Gly Glu Tyr Thr Leu Met Pro Ser Pro  
530 535 540

Thr Asp Val Val Leu Pro Gly Ala Val Ser Leu Arg Tyr Ser Gly Ala  
545 550 555 560

Thr Ala Ala Ser Glu Thr Leu Ser Gly His Gly Pro Leu Ala Gln Pro  
565 575

Leu Thr Leu Gln Val Leu Val Ala Gly Asn Pro Gln Asp Thr Arg Leu  
580 585 590

Arg Tyr Ser Phe Phe Val Pro Arg Pro Thr Pro Ser Thr Pro Arg Pro  
595 600 605

Thr Pro Gln Asp Trp Leu His Arg Arg Ala Gln Ile Leu Glu Ile Leu  
610 615 620

Arg Arg Arg Pro Trp Ala Gly Arg Lys  
625 630